

# Build University - Enterprise Partnership

## Partnership Model

University – Industry cooperation and more  
Forensic Computing

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## Introduction

Digital forensics have a fundamental role in the investigation and prosecution of crimes. Since any type of criminal activity may involve the acquisition and examination of digital evidence, the percentage of cases that involves digital evidence will continue to increase as technology proliferation is becoming more and more popular and widely used.

The preservation, examination and analysis of digital evidence require a foundation in the practical application of science, computer technology, and the law. A practitioner of digital forensics must be capable of integrating knowledge, skills, and abilities in the identification, preservation, documentation, examination, analysis, interpretation, reporting and testimonial support of digital evidence. A combination of education and practical training can prepare an individual for a career in digital forensics. As in all forensic disciplines, a combination of personal, technical, and professional criteria will influence a prospective digital forensics practitioner's suitability for employment. To accomplish this objective, there is a need to have different stakeholders cooperate in producing necessary skills and expertise. Those stakeholders include university students and staff, IT industry experts and government bodies that are responsible for digital forensics such as police departments. The main assumption is that industry experience is essential for the success of curriculum and training of the graduates. Hence, industry must be involved and industrial level training must be integrated in the programs built on this curriculum.

As in countries such as Palestine and Jordan where digital forensics is not widely known or receive enough attention from those stakeholders, there is a need to foster a sustainable model of cooperation between stakeholders so that skills and expertise are enhanced and focused to better combat digital crimes and identify culprits.

Although the model we propose would be further enhanced with additional feedback from different bodies including universities and industry experts, we have collected feedback and consulted a number of IT companies in Palestine and Jordan as well as 4 universities and academic institutions not participating in the Forensic project.

This document is one of the main deliverables of the work package #3.1.

### Work Package # 3

The main assumption is that industry experience is essential for the success of curriculum and training of the graduate. Hence, industry must be involved and industrial level training must be integrated in the programs built on this curriculum. The major risk is finding industry partners who like to join this effort.

This work package will focus on establishing a mechanism for involving industry collaboration as an integral part of the developed curriculum. Therefore, input and training from leading industry players in the partner countries will feed into the curriculum. Training tutorials and case studies will be developed, and then integrated to the curriculum. The training tutorials will be customized as short training sessions, and then coached to professionals and judges, lawyers, prosecutors, law enforcement, and judicial officers, for lifelong learning to societies at large.

This work package will also focus on developing an innovative partnership model to foster cooperation between universities and enterprises, establishing liaison offices in the participating PC institutions, with a role to develop linkages jurisdictions, governments, industry, academic institutions, professionals, and other interested parties. Also, to invite judges, lawyers, prosecutors, judicial officers, and ICT security experts to participate in advisory boards, conduct seminars, review curricula, and carry out joint projects.

One key objective of the project is the need to collaborate, train and transfer knowledge from faculty from EU universities to faculty in partner country universities. This one area where capacity building is of deep need from EU partner countries, where this work package will aim to achieve by increasing collaboration and training through a face-to-face workshops

#### **Tasks:**

- 3.1 University - Enterprise Partnership Model
- 3.2 Selection and development of case studies
- 3.3 Conduct Training for IT and Legal Professionals
- 3.4 Capacity building workshop

## Objective

The aim of this document is to outline the possible cooperation areas between the universities and IT companies in the fields of Forensic computing across Palestine and Jordan. The emphasis is on industrially-relevant, pre-competitive research via a multi-member, sustained partnerships among industry, academia, and government. This shall support the development and evolution of forensic computing work and provide procedural framework for membership and operations in addition to best practices learned over years of fostering public/private partnerships that provide significant value to the country, industry and university faculty and students. The model also hopes to help tackle emerging forensic computing problems given the fast pace of innovation and development in the technology area. Among the main conclusions and cooperation areas discussed and suggested is the idea to form an advisory board grouping expertise from both industry, academia and government. This board will provide recommendation and lend expertise to handle the issues of the digital forensic. Further details could be explained later in this document.

## Capacity building workshop//Awareness and Dissemination

As explained above, we have conducted and still in the process of conducting seminars, meetings to raise public awareness of the need to have sufficient skills and expertise in the field of digital forensic as well as encouraging the universities to include this topic in their curricula. These awareness campaigns are ongoing and still need to be further increased as involvement and efforts from participating project members are becoming more visible and mature. Events such as IT industry meetings, University's IT and law departments gatherings are targeted to reach as much as stakeholders and possible players as possible. The Forensic project ideas, objectives and EU and Erasmus project contributions are shown and disseminated to encourage involvement and participation from those stakeholders. So far we had participated in 2 events held in 2 Palestinian universities and plan to attend a third one Sept 2018 called **ExpoTech**. EXPOTECH is an event that is dedicated to the information and communication technology in Palestine, hence spotting the lights on the latest technological trends and opportunities happening on both local and global levels. Having the slogan "BETTER FUTURE", this year's **ExpoTech** is being organized by PITA (Palestine Information Technology Association), the main organizer and its partner organizer, PICTI (Palestine Information and Communication Technology Incubator) for 3 sequential days, from 24th to 26th of September 2018, under its 3 main components: the ICT conference day that shall address visionary

leaders, experts and partners by covering topics under the main pillars, the ICT exhibition where ideas come alive and buzzwords turn into reality and the gala dinner where key and high level representatives are invited to announce the opening of the tech event under the patronage of his Excellency President Mahmoud Abbas. More information about our involvement and seminars will be posted on the web site.

Another important workshop will be held in Palestine sometimes this fall that will group different participants from government and non-government institutions such as police departments responsible for digital forensics to digest ideas and recommendations to further cooperation between stakeholders at national level.

All information will be posted on the forensic web site, which serves as a main gateway where information about the project is disseminated.

#### **Police department field visits**

Through the discussions and meetings with the different police departments in Palestine, we have identified efforts to help the fledgling Palestinian police departments with its forensic skills and expertise. Although the efforts were mainly related to methods not mainly related to the digital forensics, it was a good start. In 2011, the Palestinian National Authority launched project to help improve the application of scientific methods and techniques to the investigation of crime in the occupied Palestinian territories. The aim was to strengthen the foundations of and operational tools for modern forensic science and forensic medicine services in the occupied Palestinian territories. It also helped personnel to develop the expertise and capacity to perform forensic examinations in a professional manner and in accordance with international standards. One of the goals of the project is to improve the performance of laboratories so that they meet international standards and can provide their clients (including members of the judiciary, law enforcement officers and health and regulatory authorities) with reliable data for more effective criminal justice processes. The two major components of this project was the development of forensic science (application of scientific methods and techniques to the investigation of crime) and forensic medicine (application of medical knowledge to the investigation of crime). Another focus was on investment in training future leaders in the field through building their administrative and management skills.

Although the project emphasis was not on digital forensic, the project output are clearly helpful to build on and can be of benefit to the relevant departments should any cooperation is carried out with the forensic computing teams from across the universities and the IT industry. They will be attending the next workshop planned this fall.

### Cooperation Models

Cooperation between Industry and Academia is not new and many models have been proposed particularly in the computing and IT domains. Areas of cooperation can be envisaged to include the following forms:

#### **Consultancy**

Through the faculty or department, the members can have the opportunity to pursue areas of collaboration of interest to the industry and it can give the company a reward via outsourcing some activities/work such as tackling issues or problems or help in new products and services. The pros of such an approach is that it can be easily setup once an agreement is signed. However, it may dependent on the faculty and some institutions require a share in this model. In our case, this model can be viable if it is governed by clear rules and regulations accepted by all parties

#### **Collaboration on Research**

Some institutions provide the ability for governments or industry sector to collaborate in some areas of mutual interest. They can set up a framework where rights, rules, obligations are clearly maintained and documented. This allows access for the industry to the work and expertise of faculty members and could prepare the ground for future colorations including other models. This model fits with our project ambitions and we can work on encouraging a framework for Forensic computing topics.

#### ***Contracting or Sub Contracting***

Contracting, Sub-contracting from industry on R&D with funds channeling from either industry or an external source. The idea is to perform pieces of work or supply particular services. It needs convergence of interests and expertise to work out. It could be a long or a short-term contract. In

our case, this is another form of cooperation but we strongly encourage a more broad level of cooperation

### ***Personnel Exchange***

Exchanges between the academy and industry to allow experts/leaders from industry to work in academia. This is also should be supported

### ***Spin off Company***

Faculty members can start spin-off companies with the help for facilitators inside or outside the University. The Intellectual Property Rights (IPR) and patents are maintained for the member /person who own it with the faculty/university have a share depending on the agreement/framework agreed between parties.

### **Partnership Model: FORC Advisory Council**

After much thought and discussions with different parties and individuals, we have faced a problem with the above cooperation models in that some frameworks and agreements need to be established between different parties. As it is known that the Palestinian institutions are having different policies and regulations that it might be difficult to associate with one plan to be accepted by all. The mode we suggest is to have a national advisory board that can be supported and sustained advisory board that lend support and assistance to all stakeholders. We believe that a strong and an effective advisory board can be an asset to help move with the topic of Forensic computing in Palestine and Jordan. This model of cooperation is not uncommon in our region.

A strong and effective advisory Council / committee can be an asset to help move with the topic of Forensic computing in Palestine and Jordan. We suggest that such a Council is a non-profit body which is required to have a governing team, usually a board of directors, that is responsible for the overall well-being of the in terms of setting policies, disseminate recommendations, group and strengthen cooperation with stakeholders and oversee the financial issues. The Advisory Council will not be linked to one university or one Industry but a national institution to advance the cause of digital forensics. We believe such a body is very essential given the proliferation of technology tools and the wide use of this technology in everyone's life details.

Board of directors can be selected based on expertise, background and association. It can encompass individuals from the academia, industry, police/law departments and other interesting bodies. Financial support and funding could be sought for from different sources including government and/or non-government parties. As we have IT associations like PITA, PICTI and others, we can envisage that such organizations can play an important role or be part of such an envisaged consortium. Some of the responsibilities of such a consortium:

- 1- Provide a national policy framework for cooperation, research, use of digital forensics.
- 2- Provide training and dissemination of the topic
- 3- Conduct Seminars (regular ones if possible) for all stakeholders
- 4- Groupe Expertise from different resources
- 5- Advise on certain cases that require further investigation and lend support whenever possible via contacting relevant people who can help.
- 6- Issue periodic information/disseminations to highlight important issues including precautions on individual and institution levels.
- 7- Help universities incorporate and enhance Curricula (i.e. encourage universities that do not have these topic to adopt the FORC courses)
- 8- Regularly do an evaluation of activities and adjust it when needed
- 9- Look to broaden the participation and seek means of support
- 10- Help get more involvement from relevant government departments whenever possible.

This model can be found in Palestine and Jordan, where some non-profit advisory bodies are helpful and are a reference with specific specialization.

## Evaluation and Sustainability Issues

One of the main points regarding using the above model is sustainability. Any model of cooperation and partnerships between the universities and the industry must not be short lived but based on long running and useful for all parties. Any proposed model that can be rewarding and helping with formulating and advising on issues of national policies will be better sustained and can elicit support from the community.

To evaluate the feasibility of the approach/model one need to present a way to evaluate an organization's collaborative activities based on a standard model (i.e. the European Foundation of Quality Management excellence model).

Success factors of collaboration are derived from literature and compared against the quality award criteria. The results show that success factors of a university–industry collaboration can be addressed by using the model-based evaluation criteria. The results of the study can potentially be used by actors on both sides of university–industry collaboration to evaluate their organization’s collaboration capabilities and performance.

## Conclusion

This proposed model is actively being developed and further enhanced as more feedback is still being received. We think that a national advisory council is a suitable model of cooperation that puts under its umbrella all parties and work on a national level for disseminating and helping institutions combat digital crimes. Grouping expertise from the industry and academia will strengthen research and highlight potential threats and assist with recommendations. A limited cooperation model for each university might be a short-lived approach and could not be sustainable in the future. We believe that the expertise in this important topic need be available at a national level and not on a specific region or area. Other models might risk having a different valuable expertise being limited in context and not widely shared.

## References

**To be added**